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(57) Claim

1. A method of treating a sleeping, spontaneously breathing patient suffering from obstructive sleep apnea, wherein the airway-defining tissues and muscles of the sleeping patient occasionally partially or fully relax causing partial or complete blockage of the airway of the patient, said method including the steps of:

tracking the spontaneous breathing of a patient for determining the occurrence of inspiratory and expiratory phases of the breathing of the patient;

substantially continuously providing breathing gas at positive pressure of a magnitude at least equal to ambient atmospheric pressure to the airway of the patient:

coordinating the magnitude of the positive pressure of the breathing gas with the occurrence of the inspiratory and expiratory phases of the breathing of the patient as determined by said tracking step:

maintaining a positive pressure in the airway of the patient substantially continuously during the inspiratory phase of the breathing of the patient; and

maintaining a positive pressure in the airway of the patient substantially continously during the expiratory phases, wherein the positive pressure is less than the magnitude of the positive pressure maintained during the immediately preceding inspiratory phase.

